

1928-1977

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ORIGINAL LOG BOOK OF THE--"FISH HAWK"

UNITED STATES FISH COMMISSION

STATION NUMBERS

Apr 1898

Numbers 1928 to 1977

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *1* - *1928*
 Date, *Oct. 26 - 98*
 Time of day, *11.40 AM* of tide, *1st h. of flood*
 Locality, *Narragansett Bay, R. I.*
 Exact position, *Whole Rock Pt S.S. W. $\frac{1}{4}$ W*
1 $\frac{5}{8}$ miles mag.
 Depth, *33 fath.*
 Nature of bottom, *Sand, shell*
 Dredging instrument used, *Dredge*
 Direction of drift, *N. W.*; distance, *1/16 mile*
 Temperature of air, *62° F* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, *61°* "
 Density at surface, *1.022* temp., *15.0*
 " at depth of fathoms, "
 " at bottom, *1.022* " *14.50*
 Number of salinometer, *{ No 7301 Surface*
{ 29, 81
 Barometer reading, *29.81*
 State of sky, *Overcast*
 Direction of wind, *S. S. E*; force, *stiff - 10*
 Rain, *Yes - Continuous & hard*
 Direction of surface current, *North*; force, *1/3 knot*
 " of bottom " " ; force, "
 Name of vessel, *U. S. F. S. "Fish Hawk"*
U. S.
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. G. Savenport. U.S. Navy,
 Name and position of observer,
Pharmacist J. D. Mulligan
USN

NOTES RELATING TO STATION NO. 1

Lt. Rupert anchoring
at 9⁰⁰ am and with
Lt. H. C. Bumpsee of
Brown University &
Mr. John Southwick, one
of the Rhode Island Fish
Commission proceeded
around Bunker Hill St. to this
station. The S. E. wind
increasing in force, the
sea making it so rough
as to give the vessel great
deal of motion and to
becoming so thick and
raining to get bearings and
not keeping only one cast
of the dredge was taken
the vessel was then steamed
around N. Pt. of Conanicut and
returned to the anchorage
of Newport. No living
matter was brought up in
the dredge.

Ordinary ship's thermometer ^{no. 7397}
for air temperature used.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 2 1929
 Date, Oct. 28 - 98.
 Time of day, 9.20 am; of tide, 3^d h - ebb
 Locality, Providence River R. I.
 Exact position, Sacramento Pt. Lt. S x E. 56
mile mag
 Depth, 22 1/2 fms
 Nature of bottom, Black mud
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, South; distance, 1/8 mile
 Temperature of air, 51.6 therm. No., 7397
 " of surface water, " 73.44
 " at depth of fathoms, " 73.44
 " at bottom, " 73.44
 Density at surface, 1.017 temp., 17.5
 " at depth of fathoms, " 13.5
 " at bottom, 10.19 " 13.5
 Number of salinometer, Surface 7301
Bottom 7104
 Barometer reading, 30.31
 State of sky, clear
 Direction of wind, W. N. W.; force, 2
 Rain, No.
 Direction of surface current, South; force, .3 Knot
 " of bottom " ; force,
 Name of vessel, U. S. Fish Hawk
 Service to which attached, U. S. Fish Commission
 Name and rank of commanding officer, Lt. Commr.
R. D. Davenport, U. S. Navy
 Name and position of observer,

R. D. Davenport, U. S. Navy

East 2

NOTES RELATING TO STATION NO. 2

Put down 7th beam Travel
out anchorage A and drifted
with current to this station
(Sta. 2) where hauled up.
The travel contained

Only living animals 1 *Squilla*
few *Crangon*
Palaeomonetes - few *Ellinassa*
many dead *Tritia*
Mysa shells circa
 $1\frac{1}{2}$ - $2\frac{1}{2}$ inches in length
few *Uca*

Anchorage A Mag. $N\frac{3}{4}W$
.62 miles from Sausalito
St.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 3 1930
 Date, Oct. 28. 1898
 Time of day, 9.38 AM, of tide, 3 1/4 hours of ebb
 Locality, Providence River R. I.
 Exact position, Sassafras Pt. Lt. S 3/4 E .2
miles N. ag.
 Depth, 22 1/2 fms.
 Nature of bottom, Black mud.
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, S. E 1/4 E.; distance, 5/8 mile
 Temperature of air, 51 f therm. No., 7397
 " of surface water, 13 a " 7340
 " at depth of fathoms, " 7340
 " at bottom, 13.5 a " 7340
 Density at surface, 1.011 temp., 13.2
 " at depth of fathoms, " 13.5 a
 " at bottom, 1.017 " 13.5 a
 Number of salinometer, Bottom - 7049
Surface - 7029
 Barometer reading, 30.37,
 State of sky, Clear blue
 Direction of wind, North; force, 7
 Rain, no
 Direction of surface current, S. E 1/4 E.; force, .3 knot
 " of bottom " ; force,
 Name of vessel, U. S. F. B. S. Fish Hawk.
 Service to which attached, U. S. Fish Commission
 Name and rank of commanding officer, St. Ensign
R. G. Davenport. U. S. Navy
 Name and position of observer,
D. M. Higgins
Pharmacist

Cast 3

NOTES RELATING TO STATION NO. 3

Put down 7 ft beam trawl
about station 1 and drifted
into current to ~~the~~ station
(Sta 3) when hauled up. The
trawl contained:

Living forms - 1 Ureus mercenaria
2 Platynoides ocellatus
6 Crabs
1 Eupagurus longicaudus
 $\frac{1}{2}$ pt. Trilinea
 $\frac{1}{2}$ pt. 1 Ellianassa
Many small dead Ureys.
1 Stomatopoda duplicata
Everything very dark & black.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 4 1931
 Date, Oct. 26 - 98
 Time of day, 10.15 AM of tide, 3 3/4 hours of ebb
 Locality, Providence River R. I.
 Exact position, Less than 1/2 mile S. of R. & N. 1/2 W.
300 feet mag.
 Depth, 27 fms.
 Nature of bottom, Dark mud.
 Dredging instrument used, 7 ft beam trawl
 Direction of drift, S x E 1/2 E; distance, 1/8 mile
 Temperature of air, 52° F therm. No., 7397
 " of surface water, 13° C " 7344
 " at depth of fathoms, " 7344
 " at bottom, 14° C " 7344
 Density at surface, 1.007 temp., 13° C
 " at depth of fathoms, " 14° C
 " at bottom, 1.017 " 1301
 Number of salinometer, 3032 surface Bottom
 Barometer reading, 30.32
 State of sky, Clear blue.
 Direction of wind, North; force, 2
 Rain, No
 Direction of surface current, S x E 1/2 E; force, .3 knots
 " of bottom " " force,
 Name of vessel, U. S. F. S. Hawk
 Service to which attached, U. S. Fish Commission
 Name and rank of commanding officer, Lt. Comdr
R. G. Sargent
 Name and position of observer, W. H. Huggan
Pharmacist

Cart 16

NOTES RELATING TO STATION NO. 4

Pul down 7 ft beam trawl
in 12 ft water inside red
buny No 10. Tacked out then
drifted with the current to
this station (4) when hauled up.
The trawl contained one ^{large} star
fish and.

Wing - 1 Raja erinacea
1 Pseudopleuronectes americanus.
1 Starfish
1 Sycotyphus
Several Balanus

Several Fringing Hydroids.

Numerous Trilinea

Several Crangon

Water holds many Peridinium.

1 Panopeus.

1 Syngnathus

1 Mytilus

1 colony of Cliona with eggs.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *5* *1932*
 Date, *Oct. 28-98*
 Time of day, *10.40 AM* of tide, *4 1/2 hours of ebbs*
 Locality, *Providence River R.I.*
 Exact position, *Cassaba Pt. Lt. Ho. NW 1/4 N*
.28 miles N.W.
 Depth, *28.5 feet*
 Nature of bottom, *Black mud*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *S. x E 1/2 E.*; distance, *3/10 mile*
 Temperature of air, *58 f* therm. No., *7397*
 " of surface water, *13 C*
 " at depth of fathoms, "
 " at bottom, *13 C*
 Density at surface, *1.008* temp., *13 C*
 " at depth of fathoms, "
 " at bottom, *1.018* " *13 C*
 Number of salinometer, *Superior 7301*
Bottom 7049
 Barometer reading, *30.33*
 State of sky, *Clear blue*
 Direction of wind, *North*; force, *2*
 Rain, *No*
 Direction of surface current, *S x E 1/2 E.*; force, *.3 knots*
 " of bottom " ; force,
 Name of vessel *U.S. Fish Hawk*
 Service to which attached, *U.S. Fish Commission*
 Name and rank of commanding officer, *St. Commr*
R. G. Barrington, USNavy
 Name and position of observer, *J. M. McIlhenny*
Pharmacist

NOTES RELATING TO STATION NO. 5

Put trawl down near
Sta. 4 and drifted with
current to Sta. 5 (5)
when hauled up. The trawl
contained

Many - Several species of *Thalassia*
1 *Squilla*
2 small *Uca* *florida*
Libinia *Balanus*
Several *Crangon*
Libinia *Stomatopoda* *Alpheidae*
Small *Caprellidae* *Gammaridae*
Dead shells *Uca* *Alpheidae*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 6 1933
 Date, Oct. 28-98.
 Time of day, 11:10 am; of tide, High
 Locality, Bendigo River B.D.
 Exact position, Sacramento R. abt. 4. N.W. $\frac{1}{4}$ N
42 miles N.W.
 Depth, 74 fms.
 Nature of bottom, fine sand
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, S. E.; distance, $\frac{1}{2}$ mile
 Temperature of air, 54 therm. No., 7397
 " of surface water, 13.5
 " at depth of fathoms, "
 " at bottom, 14 "
 Density at surface, 1.007 temp., 13.5
 " at depth of fathoms, "
 " at bottom, 12.17 "
 Number of salinometer, Bottom 7301
 Barometer reading, 30.33
 State of sky, Clear blue
 Direction of wind, North; force, 2
 Rain, No
 Direction of surface current, S. E.; force, 4 knots
 " of bottom " ; force,
 Name of vessel, U.S. Fish Com. Hawk
 Service to which attached, U.S. Fish Com.
 Name and rank of commanding officer, St. Andrew
2. L. Campbell USNavy
 Name and position of observer, W. H. Gilligan
Thames

NOTES RELATING TO STATION NO. 6

Put trawl down near sta 5
and drifted with current
to this station 6, when hauled
up. The trawl contained

Many Callinectes

Small Pilodius

Several Eurytemora

2 Piles of soft mud

1 live toad

2-3 small lizards

1 small lizard

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 7 / 1934
 Date, Oct. 28-1897
 Time of day, 11:35 ; of tide, 5 hours of ebb
 Locality, Providence River R. I.
 Exact position, Julius Rk. ab. H.O. E $\frac{1}{2}$ N
300 ft. mag.
 Depth, 31.5
 Nature of bottom, Blue mud
 Dredging instrument used, 7 ft beam trawl
 Direction of drift, S. by E. ; distance, $\frac{3}{16}$ mile
 Temperature of air, 56 therm. No., 7297
 " of surface water, 14 ..
 " at depth of fathoms, ..
 " at bottom, 14 ..
 Density at surface, 1008 temp., 14
 " at depth of fathoms, ..
 " at bottom, 1018 ..
 Number of salinometer, Anchor - 201
Bottom 70009
 Barometer reading, 30.33
 State of sky, over blue
 Direction of wind, North ; force, 2
 Rain, No
 Direction of surface current, SEB ; force, 1.5 knots
 " of bottom " ; force,
 Name of vessel, U. S. Fish Hawk
U. S. Fish Commission
 Service to which attached,
 Name and rank of commanding officer, Dr. Charles
R. B. Davenport, Surgeon
 Name and position of observer, W. C. Clegg

NOTES RELATING TO STATION NO. 7

Put trawl down near star 5-
and drifted with current
to the station when hauled up
The trawl contained one small
star fish and

Henry Thacker Nelson

Erasmus

1 week -

1. *Chelidonia* —

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 8 1935

Date, Oct. 28/98

Time of day, 7.55 PM

Locality, 3^d hr. of flood, Red.

Exact position, Bonamicut Pt. dist. N.Y.

Depth, 4 to 6 fms.

Nature of bottom, mud

Dredging instrument used, 7 ft. beam trawl

Direction of drift, N.E.

Temperature of air, 57.6

therm. No. 727

" of surface water, "

" at depth of fathoms, "

" at bottom, 13.5

Density at surface, 1.020

temp., 13.5

" at depth of fathoms, "

" at bottom, 1.020

" 13.5

Number of salinometer, 7044

Barometer reading, 30.30

State of sky, cloudy - fair

Direction of wind, N.E.

Rain, 76 -

Direction of surface current, N.N.W.

" of bottom "

Name of vessel, U.S. Fish Hawk

Service to which attached, U.S. Fish Comm.

Name and rank of commanding officer, Lt. Comdr.

Name and position of observer, H. B. Swenson

NOTES RELATING TO STATION NO. 8

2 *Haydenia*

2 *Raja erinacea* —

3 *Cathartes* —

2 *Myiagrus* —

1 *Myiagrus* —

Myiagrus —

1 *Myiagrus* —

1 *Myiagrus* —

1 *Myiagrus* —

Myiagrus —

1 *Myiagrus* —

1 *Myiagrus* —

Myiagrus —

Myiagrus —

Myiagrus —

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 9 1936
 Date, Oct. 31 - 97
 Time of day, 3.55 PM of tide, 4th hr. of flood
 Locality, Narragansett Bay R.I.
 Exact position, Onamicut det. dt. H.
 7 1/2 W 1/2 W 2 1/4 miles N.E.
 Depth, 3 1/2 to 4 1/2 fms.
 Nature of bottom, muddy
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, E. S. E. ; distance, 1/8 mile
 Temperature of air, 50° f therm. No., 7297
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, 1.019 temp., 13.5° C
 " at depth of fathoms, "
 " at bottom, 1.020 " 13° C
 Number of salinometer, 7201
 Barometer reading, 30.30
 State of sky, Overcast
 Direction of wind, N. E. ; force, 2
 Rain, no
 Direction of surface current, N. N. W. ; force, 3 knots
 " of bottom " ; force,
 Name of vessel, U.S. L.S. Fish Hawk
 Service to which attached, U.S. Fish Commission
 Name and rank of commanding officer, Lt. J. G. Davis
 Name and position of observer, R. W. Milligan

NOTES RELATING TO STATION NO. 9

1 Star fish

Cancer Irroratus

Diastylis gouldii

Eupleura

Crangon vulgaris

Monodon

Tritia trivittata

Cerbratulus

Urdia limatula

Chirophora

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 10

1937

Date, Oct. 31

Time of day, 11-am ; of tide, 3 hours ebb.

Locality, Long Beach Bay

Exact position, 1/2 mile S. of Long Beach Light N. E. & E

1/2 mile S. of Long Beach Light N. E. & E

Depth, 15 fathoms

Nature of bottom, mud & sand.

Dredging instrument used, 7 ft beam trawl.

Direction of drift, S x W. 1/4 W. ; distance, 1/2 mile.

Temperature of air, 57 Fahr.

therm. No. 7397

" of surface water.

" at depth of fathoms.

" at bottom, 50

Density at surface, 1.024

temp., 12.6°

" at depth of fathoms.

" at bottom, 1.024

" 13.0°

Number of salinometer, both obs. 710

Barometer reading, 29.77

State of sky, Clear blue & cloudy

Direction of wind, N. E. ; force, 4

Rain, No -

Direction of surface current, S. E. ; force, 3/10

" of bottom " : force.

Name of vessel, U. S. Fish Hawk

Service to which attached, Fish Commission

Name and rank of commanding officer, Lt. Comdr.

R. G. Saverpost USNavy

Name and position of observer, L. J. Milligan

Pharmacist USNavy

NOTES RELATING TO STATION NO.

Nothing in travel
Travel forced.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. *11th 1938*
 Date, *Oct. 31 - 1898*
 Time of day, *11.20 Am.*; of tide, *3 hr. 20 m. of ebb.*
 Locality, *Maragousette Bay*
 Exact position, *Beaver-tail light, N.E. & E 1/4 E,*
~~*1.12 miles*~~
 Depth, *12 fathoms*
 Nature of bottom, *Sand*
 Dredging instrument used, *10 foot beam trawl.*
 Direction of drift, *N. 3/4 N.*; distance, *1/2 mile*
 Temperature of air, *53° Fahr.* therm. No., *7897*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.022* temp., *12.7°*
 " at depth of — fathoms, — " —
 " at bottom, *1.024* " *13.4°*
 Number of salinometer, *both obs. 7104*
 Barometer reading, *29.77*
 State of sky, *Blue - cloudy*
 Direction of wind, *N. W.*; force, *1*
 Rain, *No*
 Direction of surface current, *S. S. W.*; force, *3/10*
 " of bottom " force "
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Ch. Comdr.*
R. G. Sawcreek. N. H. Navy
 Name and position of observer, *J. D. Hefligan*
Observer U. S. Navy

NOTES RELATING TO STATION NO. 11

2 small Maroon colored stone

2 Shells (Cyprina)

2 Spherical bones

5 Small fish, ~~probably~~ Silver hake
Portia

Two bivalves

Thomson crab, Lophocarpus

Most of the shells were inhabited

by Lophocarpus

3 Goshawk talpae

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *12* *1939*
 Date, *Oct. 31-1898*
 Time of day, *12.05 PM*; of tide, *4 hours ebb*
 Locality, *Narragansett Bay*
 Exact position, *Beach Point, N.E. 2.37*
~~*Mag. 1 mile*~~
 Depth, *12 fathoms*
 Nature of bottom, *Sand*
 Dredging instrument used, *10 foot beam trawl*
 Direction of drift, *P.W. 1/2*; distance, *3/8 of mile*
 Temperature of air, *53 Fahr.* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.022* temp., *13.2*
 " at depth of fathoms, "
 " at bottom, *1.023* " *13.6*
 Number of salinometer, *6th ed. 7104*
 Barometer reading, *29.74*
 State of sky, *Cloudy*
 Direction of wind, *N.W.*; force, *4*
 Rain, *No*
 Direction of surface current, *P.O.W.*; force, *3/10*
 " of bottom " force
 Name of vessel, *U.S.F.C. D. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *St. Comdr.*
R. H. Sargent, U.S.N.
 Name and position of observer,
R. H. Sargent
Thomson, U.S.N.

NOTES RELATING TO STATION NO. 12

- 27 Osmocheilus hake
 about 7 by young silver hake
 14 *Merluccius flousdus*
 1 spotted "
 1 large silver hake
 4 med. "
 15 small spates
 1 barn-door "
 5 young fish
 2 hors. sha crabs
 1 Cancer ~~inornatus~~ borealis
 3 " young
 1 blue crab
 2 large star fish
 5 small purple star (?)
 Some kelp. Cladoc.
 1 young sea urchin
 3 tritons
 Hydroids
 3 *Commensals*
 few *Ascidians* on sea weed.
 1 *Nudibranch*.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 13 1960
 Date, Oct. 31 - 1898
 Time of day, 1:35 pm of tide, 5 1/2 hours of tide
 Locality, Thompson's Bay
 Exact position, Beaver Tail light N.E. 1/2 sec. 2.7
~~miles N. Thompson's Bay, N.E. 1/2 sec. 2.7~~
 Depth, 99 fms
 Nature of bottom, Clayey, sticky sand
 Dredging instrument used, 10 fms beam trawl
 Direction of drift, E. N. : distance, 1/2 mile
 Temperature of air, 56 fahr therm. No., 7397
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, 1.022 temp., 13°
 " at depth of fathoms, " "
 " at bottom, 1.024 " 14°
 Number of salinometer, 7104
 Barometer reading, 29.72
 State of sky, 1/2 blue - cloudy
 Direction of wind, N. N. W. ; force, 4
 Rain, No
 Direction of surface current, S. D. W. ; force, 2/10
 " of bottom " : force, "
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, St. Commr
R. G. Davenport, USNavy
 Name and position of observer, J. D. Milligan
Pharmacist, USNavy

NOTES RELATING TO STATION NO. 13

1 young cuck -

4 Sparrows Hawk

1 Antelope Jack (egg laid?)

7 Crows ~~in water~~ Boreas

few small " probably also young

2 Tomcat Owls

8 Purple Star

18 small - unknown

1 Murchison

1 vab Lucina Philosa

1 Nodda (piera)

1 Fucus

few Caprella

few other shells occupied by Lingula

1 Gammarid

1 Paraceta Lepid.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *14* -- *1941*
 Date, *Oct 31 - 1898*
 Time of day, *9, 20 pm*; of tide, *low water*
 Locality, *Narragansett Bay*
 Exact position, *Pt. Judith N. x S $\frac{1}{4}$ x S.* *3.25* miles
~~*mag. N. 70. 71. S. 4 miles*~~
 Depth, *19 $\frac{1}{2}$ fathoms*
 Nature of bottom, *Sticky, sandy clay*
 Dredging instrument used, *10 fathom dred*
 Direction of drift *N. S. W.*; distance, *$\frac{1}{4}$ mile*
 Temperature of air, *55 Fahr* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.022* temp., *13.1*
 " ~~at depth of fathoms,~~ "
 " at bottom, *1.0235* " *13.3*
 Number of salinometer, *both obs,* *7104*
 Barometer reading, *29.76*
 State of sky, *Blue - Cloudy*
 Direction of wind, *N. N. W.*; force, *4*
 Rain, *No*
 Direction of surface current, *0*; force, *0*
 " of bottom " : force.
 Name of vessel, *U. S. F. C. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *St. Comdr*
R. B. Thompson USN
 Name and position of observer,
L. H. Morgan
Thomson, Morgan

NOTES RELATING TO STATION NO. 14

- 4 Maroon Star fish
- 1 Skate Erinaceus
- 1 " spotted -
- 1 shrimp - red striped -
- 1 small silver hake
- 1 small flounder, red pinnacles
- 1 ^{small} ~~large~~ silver hake.
- 1 squid

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 15 - 1902
 Date, Oct. 31 - 98
 Time of day, 3.00 pm : of tide, 3/4 from flood
 Locality, Narragansett Bay
 Exact position, ~~White Swan Light 2 miles E. & S.~~
~~1.62 miles~~
 Depth, 13 1/2
 Nature of bottom, Hard sand
 Dredging instrument used, 10 foot beam trawl
 Direction of drift, N. E. : distance, 1/2 mile
 Temperature of air, 54 therm. No., 7397
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, 1.022 temp., 13.5
 " at depth of fathoms, "
 " at bottom, 1.0235 " 13.5
 Number of salinometer, 7104
 Barometer reading, 29.78
 State of sky, Blue - cloudy
 Direction of wind, N. W. : force, 4
 Rain, No -
 Direction of surface current, N. E. : force, 1/10
 " of bottom " : force,
 Name of vessel, U. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Lt. Comdr.
 R. H. Davenport, USN
 Name and position of observer,
 J. S. Silliman
 Commercial Fishery

Several Caprellae.

1 *Parthenia tenuis costata*, Reid,
1 Cancer ~~Emmasta~~, bonalis

3 "Young."

1 Empty egg case large when
Vermorel collected.

1 female worm.

1 small base - (?)

6 red striped shrimp.

1 young sea-robin.

1 very large annelid.

2 small flounder (small)

4 Agamidae larvae

1 empty shell *Modiola modiolus*

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 16 - 1943
 Date, Oct. 31 - 94
 Time of day, 3:35 PM of tide, 1 1/2 hrs of flood
 Locality, Harbor mouth Bay
 Exact position, Pt. Judith N. 1/2 S. 1/2 W. 2 miles ^{mag.}
~~Boston~~ N.E. 1/4 N. 1/2 W. 5 miles
 Depth, 8 8/10 fms
 Nature of bottom, fine sand
 Dredging instrument used, 10 fms beam trawl
 Direction of drift, S. 1/2 W. x N. 1/2 W.; distance, 5/8 mile
 Temperature of air, 54 Fahr therm. No., 7397
 " of surface water, " " " " " "
 " at depth of fathoms, " " " "
 " at bottom, " " " "
 Density at surface, 1022 temp., 13°
 " at depth of fathoms, " " " "
 " at bottom, 1024 " 13.1°
 Number of salinometer, 7104
 Barometer reading, 29.79
 State of sky, Blue - cloudy
 Direction of wind, N. N. W.; force, 4
 Rain, No
 Direction of surface current, N. E.; force, 2
 " of bottom " " " " " " ; force, " "
 Name of vessel, U.S. Fish Comm.
 Service to which attached, Fish Commission
 Name and rank of commanding officer, LT. Comdr
R. C. Davenport USN
 Name and position of observer, J. D. McGowan
Pharmacist. USN

NOTES RELATING TO STATION NO.

16

- 2 to 3 doz small purple star fish
 1/2 doz small squid
 6 *Eupagurus benhardicus*
 3 young eelgrass (?)
 2 sea urchins
 1 *Stella* on kelp
 1 *Eupagurus longicauda*
 1 *Porolithys* *oxytremus*
 5 shrimp Pink color (?)
 1 *Carcinus*
 1 Fragment of sponge (?)
 1 large *Pertusa tenuicostata*
 1 small " "
 2 small " "
 2 empty shells of *Modiola modiola*
 1 large *Malacostraca* sp.
 6 *Merluccius flourensii*
 18 *Aporrhais* *hastata*
 2 *Libinia* " "
 5 *Stellaria (S. macleayana)*
 2 " *Barnea* *barnea*

The 10 fms beam trawl was badly
torn & disabled during this cast.
Apparently by rocks.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 17 — 1944
Date, Feb. 15 1898.
Time of day, 9.15 am.; of tide, 1/2 hour of ebb,
Locality, Entrance to St Albans Sound
Exact position, N. 2nd light N 1/2 E. 1 1/4 miles
~~St. Albans light, S. 1/2 E. 7 1/2 miles~~
Depth, 4 fms.
Nature of bottom, Muddy
Dredging instrument used, Beam trawl
Direction of drift, N 1/2 E.; distance, 3/8 mile
Temperature of air, therm. No., 72.97
" of surface water, "
" at depth of fathoms, "
" at bottom, "
Density at surface, 1.023 temp., 12.8
" at depth of fathoms, "
" at bottom, 1.024 " 13.0
Number of salinometer, 7104
Barometer reading, 30.73
State of sky, Clear blue
Direction of wind, N. E. W.; force, 7
Rain, No
Direction of surface current, N.; force, .8
" of bottom " : force,
Name of vessel, U.S.F.C. Fish Hawk
Service to which attached, Fish Commission
Name and rank of commanding officer, Lt. J. H. ...
Name and position of observer, J. H. ...

NOTES RELATING TO STATION NO. 17.

- 1 small anemone
- 1 Drift apron string covered with
Membranipora and Obolus sp.
Fragments of Chlora sulphurea
Sponge attached to algae
a few small purple sponges
Pelmorus Hydroid 1 colony
Spirorbis borealis? on algae
a few nereidolpines
a few Arctos
- 102 Small nudibranchs acoli?
- Mytilus (small)
- Small anemone
- Siphonostoma sp.
- Several species Bryozoa
- 1 spicule of coralline (?)
- 1 Saxicora
- a few live eggs of nereidolpines
- A small terredolid

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 18 — 1945
 Date, Nov. 1st 1898
 Time of day, 9.45 am. : of tide, 1 hour of ebb.
 Locality, Entrance Rte. to Port of New York
 Exact position, Pr. light N. E. 1/2 E. 2.7 miles
Black Lake North light, S. Head 6 1/2 miles
 Depth, 13 fathoms
 Nature of bottom, Rock & sand
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, N x N : distance, 5/8 miles
 Temperature of air, 53° Fahr. therm. No., 7397
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, 1.023 temp., 12.9°
 " at depth of fathoms, " "
 " at bottom, 1.024 .. 13.1°
 Number of salinometer, 7104
 Barometer reading, 30.25
 State of sky, Clear blue.
 Direction of wind, N. N. W. ; force, 1
 Rain, no —
 Direction of surface current, N ; force, 1 knot
 " of bottom " ; force, "
 Name of vessel, U. S. Fish Com. Steamer
 Service to which attached, Fish Com.
 Name and rank of commanding officer, John H. ...
 Name and position of observer, John H. ...

NOTES RELATING TO STATION NO. 18

Clusia sulphurea

algae with *Spirorbis* sp. abundant

2 *Oncomelasma*

1 *Libinia*

Pygospio 2 or 3 species

Tortoise shells ^{add} *in situ* by *C. longicauda*

a few *Idotea* sp.

2 *Oncomelasma* shells. *C. longicauda* was

Hydrobia in fruit

numerous *Chironomus*

1 small *Cantharus*

a few very small annelids in algae

Glyptotendipes planus } *C. triseriatus*

" *parvulus* }

Hydractinia

a small fragment of *Amorcinus*

23

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *19* — *966*
 Date. *Nov. 1st / 1898*
 Time of day, *10.20^{am}*; of tide, *about 1/2 ebb*
 Locality, *Entrance to Bl. Isl. Sound, Conn.*
 Exact position, *off light N.E. of E. 3 1/2 miles*
~~*Station is just off N.W. of N. 1/2 mile*~~
 Depth, *3 fathoms*
 Nature of bottom, *Sandy - Rocky*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N.N.W.*; distance, *1/2 mile*
 Temperature of air, *52° Fahr.*, therm. No., *7597*
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, ..
 Density at surface, *1.023*, temp., *13.0°*
 " at depth of .. fathoms, ..
 " at bottom, *1.024*, .. *13.5°*
 Number of salinometer, *7104*
 Barometer reading, *30.26*
 State of sky, *Clear blue*
 Direction of wind, *N.N.W.*; force, *1*
 Rain, *No.*
 Direction of surface current, *N.*; force, *1 hour*
 " of bottom " " ; force, ..
 Name of vessel, *U.S.F.C. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *E. A. Andrews, Lt. Comdr.*
 Name and position of observer, *J. M. ...*

NOTES RELATING TO STATION NO. 19

Murchisonia & small Cribrella
a few very small purple stars
Sorbola contracta
Mytilus
Anachis
Fragment of Alcyonium carnosum
a few Lepidodermis
Amorcinus
Cliona sulphurea
one or 2 varieties of sponge
1 piece Astrangia
Several clay shell corals
" Species Hybridus some in fruit
Quantities of Delosia (at least half
also) with Spirorbis attached
Ophiopholis aculeata
Gacibulum striatum
A few Idotea
E. Longicauda in E. triseriata shell
Small pieces of Burella
A few eggs of Urosalpinx
Spirorbis
Pyrosoma, tubes with E. longicauda

The bottom is rough -

643

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 20 - 1947
Date, Nov. 1st 1898
Time of day, 10.50 ; of tide, 2 hours of ebb
Locality, Entrance to Block Island Sound
Exact position, At first light, N. by E. 1/2 N. 4 1/2 miles
~~Block Island Sound light S. by E. 1/2 E. 4 1/2 miles~~
Depth, 28 1/2 fathoms.
Nature of bottom, Sticky
Dredging instrument used, Small dredge.
Direction of drift, S. 1/4 W ; distance, 1/4 mile
Temperature of air, 52 therm. No., 7397
" of surface water, 1.023 ..
" at depth of .. fathoms, ..
" at bottom, 57 fms. ..
Density at surface, 1.023 temp., 13.7°
" at depth of .. fathoms, ..
" at bottom, 1.024 .. 13.8°
Number of salinometer, 7104
Barometer reading, 30.26
State of sky, Clear blue
Direction of wind, N. N. W. ; force, 1
Rain, No -
Direction of surface current, N. ; force, 1 knot
" of bottom " ; force, ..
Name of vessel, U. S. F. C. S. Fish Hawk
Service to which attached, Fish Commission
Name and rank of commanding officer, Dr. Comdr
R. B. Davenport, USN
Name and position of observer, J. D. Milligan.
Pharmacist, USN

The specimens of [unclear]
This station not fully made out
NOTES RELATING TO STATION NO. 20

Syrrina Islandica - 1 dead,
Asteria conchiformis
Cardium pinnulatum
Syllis pycnonotus **

Phoron [unclear] - [unclear]

Fritia

5 *Platys pinnatus*

Alpheia spinicollis rare

Limnaea [unclear]

Crangon vulgaris

1 small [unclear] [unclear]

Amphipoda

Two young [unclear]

Thalassidroma [unclear] & [unclear] [unclear]

A few [unclear]

on the [unclear] of [unclear]

also see
Notes of
Sta 21 for
[unclear]

20
a few small *holothurians* [unclear]
Yoldia papillata
A number of diff spec. of [unclear] [unclear]
1 or 2 spec. of [unclear]
Littor

Two diff spec. [unclear] [unclear] [unclear]

Sternaspis [unclear]

Merula strobilata ([unclear])

1 *Chlidaspis*

A few small amphipods

A large circle covered with mud
tubes of a small amphipod [unclear]

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *21 - 1948*
 Date, *Nov. 1st 1898*
 Time of day, *11-45 Am.* ; of tide, *3 hours of ebb.*
 Locality, *Entrance to Black Sea Sound*
 Exact position, *P. fort light N. N. E. 6 1/4 miles, mag.*
Black Sea Sound light N. N. E. 3 1/4 miles
 Depth, *24 fathoms*
 Nature of bottom,
 Dredging instrument used, *7 furl beam trawl*
 Direction of drift, *N. E. W.* ; distance, *1/2 mile*
 Temperature of air, *55° Fahr.* therm. No., *7397*
 " of surface water,
 " at depth of fathoms,
 " at bottom, *56.5° Fahr. Depoite*
 Density at surface, *1.023* temp., *13° C*
 " at depth of fathoms,
 " at bottom, *(Sigsbee's cup) 1.024* " *13° C*
 Number of salinometer, *7104*
 Barometer reading, *30.24*
 State of sky, *Clear blue*
 Direction of wind, *N.* ; force, *1*
 Rain, *No -*
 Direction of surface current, *N.* ; force, *1 knot*
 " of bottom : force,
 Name of vessel, *U. S. F. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr.*
R. B. Davenport, USN,
 Name and position of observer,
J. D. Holligan,
Pharmacist USN

NOTES RELATING TO STATION NO. 21

Several large pieces of suberites compacta
 E. Round rock - several
 Kelp, mostly *Dictyota*, *Dictyota membranifera*
 A few *Tringa* larvae
 A number of caprells
 A few young squid
 A few small crabs -
 a young sea robin
 a sculpin - (common)
 A few *Sypho pygmaea*
 1 young scud in tank
 Some *Amarecium*
 a small *Isotacharia* (undetected)
 1 *Lacuna fibosa* (dead)
 a *Meretrix* worm
 Few *Prorocentrum* *ovovivipara*
 1 small barnacle crab, (undetected)
 . . . fish ()
 Few *Urechis*
 Few endometean animals
 isopods
 Small goby - common.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *22 - 1949*
 Date, *Nov. 1 '98*
 Time of day, *1.10 pm*; of tide, *about 4/5 low tide*
 Locality, *East of Block Island*
 Exact position, *Block Island North Br. N x N 1/2 N*
1/2 miles
mag. 13th Dec. 2.5 light S. 1/2 E. 5 1/2 m
 Depth, *22 fathoms*
 Nature of bottom, *Sandy. Hard*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N. N. E.*; distance, *1/2 miles*
 Temperature of air, *54 Falm* thermal No. *2297*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, *5-6 fathoms* *myrtle.*
 Density at surface, *1.023* temp., *13.1°*
 " at depth of fathoms, "
 " at bottom, *Cyclops cup 1.023* " *13.2°*
 Number of salinometer, *7104*
 Barometer reading, *30.23*
 State of sky, *Blue - light haze.*
 Direction of wind, *N.*; force, *✓*
 Rain, *No -*
 Direction of surface current, *N.*; force, *1 knot*
 " of bottom " " ; force,
 Name of vessel, *U. S. F. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *St. Andrew*
R. M. Harcourt M.D.
 Name and position of observer, *J. D. Miller*
Pharmacist

- ~~Several winter flounder~~
 1 adult - 1957 "
 1 small "
 over 1 by winter flounder (several)
 several window-panes (both)
 several young against glass by hydrozoa
 1 acropora - 13 sp?
 1 small acropora
 1 large sea-urchin - unknown
 numerous sand dollar
 2 starfish - 1 in area.
 1 " Butterfly (?)
 2 young ^{Pandanus} sea urchin (several)
 few small crinoids
 several feather stars
 1 *Crepidula fornicata*
 1 *Cyprina islandica* (dead)
 1 *Buccinum* shell with *Peridinium*
 a few purple stars
 several maroon stars
 1 live *Buccinum* (small)
 several *Peridinium* & *Cyprina*
Spirorbis on algae
 long dark stems of *Tabularia* by pond.
 probably *Anthozoa* (in tube)
 1 *Corallina vulgaris* Small
 few young base (red)
 grey small *Cantharus* borealis
 few pieces of sponge
 1 *Cantharus*
 1 *Cantharus aculeatus*

- 10 *Agassizella* baska.
- 8 *Forsteria* floridensis
- 1 small x 1 adult *via* *conica*
- 1 *Minion* *form* *floridensis*
- 1 *Cribrella*
- 1 *per* *keelin* *Ten*
- 1 *band* *dollar*
- A few sea urchins - young *P. carolinensis*
- 1 *Crucibulum* *striatum* with eggs
- Scarus* *condensatus*
- Candalaria*, abundant
- Cyclocardia* *brevialis*
- Astarte* *flattus*
- Cyprina* *solitaria* (dead shell)
- Littoral* *spiral*
- Young *Sipho* *bake*
- 1 *Green* *Borialis*
- few *Crangon* *vulgaris*
- Young *Gubby* = *A. anax*
- 1 *Anemonia*
- Lunatia* *lucida*
- 1 Small white *holothurians*
- 1 young - (Mp. bar)
- Dead eggs of *shale*
- 1 *Panthera* *maculata*
- " " *Forsteria*
- A few *Maroon* *stars*
- 1 *Merist* *only* *undell* *original*
- a fragment of *Myxomura* *canonum*
- 1 large *scallop* 18 spines?
- 1 *lar* *tubularia* *corthony*
- 1 dead shell of *medusa* (condition?)
- 1 small purple star - *Ind* (spoke young)

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *24 - 1951*
 Date, *Nov 1st 1898*
 Time of day, *2.40 pm*; of tide, *low water*
 Locality, *S. of Block Island*
 Exact position, *1/2 mi S. of Block Island 1.6 miles*
~~*North of Cape Cod 15 miles*~~
 Depth, *16 fathoms*
 Nature of bottom, *Sand - 1/4 Hard*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *S. by E. 1/2 S.*; distance, *3/4 mile*
 Temperature of air, *51° Fahr.*, therm. No., *7399*
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, *56.5 Negretti*
 Density at surface, *1.023*, temp., *13°*
 " at depth of .. fathoms, ..
 " at bottom, *1.023* *Diptheria* *17.9°*
 Number of salinometer, *7104*
 Barometer reading, *30.23*
 State of sky, *Blue, light - haze*
 Direction of wind, *N.*; force, *✓*
 Rain, *No -*
 Direction of surface current, *0*; force, *0*
 " of bottom " ; force,
 Name of vessel, *U. S. F. C. O. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Ch. E. Brown*
R. H. Brown, Jr., U.S.N.
 Name and position of observer, *James H. Brown*

NOTES RELATING TO STATION NO. 94

- 1 *Parus flourens*
 Several *Microgaster flourens*
 3 *rusty*
 1 1/2 bushels sand dollars
 few small silver hake
 1 large empty egg of skate
 few young sculpin
 young sea robin - several, *P. coarctatus*
 small number *parvalus*
 Hydroid (?)
 Few *Corbula*, small
 1 small *Parus* *flourens*
 young squid
 Astute Chatterer
 Young sea clams
 Young rusty flounder
 Small *Merluccius*
 1 *perlin* *ten*
 Kelp covered with obolus
 1 large sculpin
 1 *Myxine* *trachea*
 1 large skate
 Few *Crangon*
 5 skates, small - 2 sp.
Cyclocardia *locata*
 1 young *Crangon* *trachea*
 1 white *Polychaeta*
Forster
 Few young *Crangon*
 1 small *Crangon*
 1 *Amachis*

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No.

75 - 1952

Date,

Nov. 1 - 98

Time of day,

3.30 pm; of tide, 1 hour of flood

Locality,

South of Black Island

Exact position,

Off Id. O.E. Light (NE $\frac{1}{2}$ E 2.75 miles)

Depth,

13 fathoms

Nature of bottom,

Hard, Gravelly.

Dredging instrument used,

7 fur beam trawl

Direction of drift,

S.W. 340° ; distance, $3\frac{1}{4}$ miles

Temperature of air,

50° Fahr

therm. No., 7397

" of surface water,

" at depth of fathoms,

" at bottom,

Density at surface,

1.023

temp.,

13°

" at depth of fathoms,

" at bottom,

1.025

" 12.7°

Number of salinometer,

7104

Barometer reading,

30.28

State of sky,

Blue - light haze

Direction of wind,

N. ; force,

Rain,

NO -

Direction of surface current,

No perceptible

" of bottom " ; force,

Name of vessel,

U.S.F.C.R. Fish Hawk

Service to which attached,

Fish Commission

Name and rank of commanding officer,

R. S. Thompson, Master

Name and position of observer,

J. H. Morgan, Master

5 Winter flounders

5 winter flounders

few young sea robins

Several small white polychaetes

a few Crangon spp.

Some young common brachy (?)

two scudalms

2 small pieces of pteropoda

lots of gravel

Sponge with few small hydroids,

a few Nereobardis

Tritons

2 young sea clams

1 small polychaete

1 long caudo

Limnoria trifenestrata

2 or 3 small purple stars

Several detrital crustaceans

few Caprells

4 purple stars 2 in. across

2 light, 2 dark

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *26, - 1953*
 Date, *Nov. 2nd 1898,*
 Time of day, *10. am.* ; of tide, *^{an hour} 3/4 of ebb*
 Locality, *Narragansett Bay*
 Exact position, *Inter. Bldg light, E. x W.*
Dist. 6 1/2 miles mag.
 Depth, *7 1/2 fathoms,*
 Nature of bottom, *Mixed*
 Dredging instrument used, *7 ft beam trawl,*
 Direction of drift, *E. x S.* ; distance, *1/4 mile mag.*
 Temperature of air, *56° Fahr.* therm. No., *7397*
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, *1.024* temp., *12.7°*
 " at depth of fathoms, " "
 " at bottom, *1.026* " *13.°*
 Number of salinometer, *7104*
 Barometer reading, *30.17*
 State of sky, *Blue - Clouds -*
 Direction of wind, *N. x W.* ; force, *5*
 Rain, *no*
 Direction of surface current, *N. x W.* ; force, *1/4 Knot*
 " of bottom " " ; force, "
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Dr. Comdr*
R. G. Barnum, U. S. Navy
 Name and position of observer, *J. D. Milligan*
Phar. U. S. N.

NOTES RELATING TO STATION NO.

26

Mytilus edulis - Half bushel - small size
Gibbula
Spisula - common

2 *P. Carolinus* young
 2 *Modiolus flammula* small size
 - *Stellioa Bonneti* *Scrinaria*
 1 *Pycnopora*

Crepidula fornicata common
 few *Scapharca*

Panopaea hydroid 2 or 3 - large

3 Rock Clb. 1

few *Lepidodonta* sp.

1 *Brachidontes* sp.

Eurosalpinx

Crepidula plana

Fraxiphonia affinis

Dead shells of *Mytilus*

" *Crepidula conca*

" *Callista conca*

20 Star fish 7 inches (f.b.)

1 Pipe fish

30 Sea urchins *Stellioa*

few *Crangon* Var.

Anacharis - Species (few)

E. longicauda

Hydractinia

Small spec of *Scapharca*

Dead shells of sea *Transenna*

1 *Littorina littorea*

Littorina

1 Pipe fish

few dead *Scapharca*

Mytilus edulis
Callista conca (dead shells)

Block

643

RECORD OF DREDGING,
TEMPERATURE AND DENSITY.

Station No. 27 - 1954
Date, Nov. 2 - 1898.
Time of day. 10.18 am : of tide. 1 hour of ebb
Locality, Manassett Bay
Exact position, Dutch Field Light R. 77 x D
1/4 South - dist. 1 1/4 miles mag.
Depth, 10 1/4 fathoms
Nature of bottom, Stony. shells
Dredging instrument used, 7 foot beam trawl
Direction of drift, E x S ; distance, 1/2 miles
Temperature of air, 56° fahr therm. No., 7397
" of surface water, ..
" at depth of fathoms. ..
" at bottom, ..
Density at surface, 1.022 temp., 17.5°
" at depth of fathoms. ..
" at bottom, 1.022 " 13.0°
Number of salinometer, 7104
Barometer reading, 30.17
State of sky, Blue, Cloudy
Direction of wind, S.W. : force, 5
Rain, no
Direction of surface current, S x W. : force, 1/3 knot
" of bottom " : force.
Name of vessel, U. S. F. C. S. Fish Hawk
Service to which attached, Fish Commission
Name and rank of commanding officer, Lt. Comdr
R. B. Davenport, USNavy
Name and position of observer, J. S. Milligan
Pharmacist, USN.

NOTES RELATING TO STATION NO. 27

- Cindus* - dead rusty brown shells.
Aspidula plenty
 Few small hydroids.
 Few lepidonotus
 Few *Tritia*
E. longicauda
 1 *Microciona*
Oreomyza Vahl.
Pomozoa
 1 *Eumecurion*
 1 star fish (prob) rather small
Aspidula *flava*
 1 *Glyptothorax* r
 Few dead shells *Aspidula*, rusty brown
 and *Gallista convexa*
 Egg string of *Sycotypus* with young
 1st small amphipod
 Oak leaf detritus (algae)
Platopora feet
Heteromysalis forms numerous
 in dead shells of *Sycotypus*.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. *28 - 1955*
 Date, *Nov. 2 - 1898*
 Time of day, *10.45 am* of tide. *1 1/2 h. of ebb*
 Locality, *Narragansett Bay*
 Exact position, *Dutch Island Light, 0.0 N.*
2.67 miles N.W.
 Depth, *9 fathoms*
 Nature of bottom, *Hard - sandy*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *E 1/2 N.* distance, *1/2 miles*
 Temperature of air, *56° Fahr.* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.021* temp., *12.3°*
 " at depth of fathoms, "
 " at bottom, *1.022* *13.0°*
 Number of salinometer, *7104*
 Barometer reading, *30.16*
 State of sky, *Cloudy.*
 Direction of wind, *N. E.* ; force, *6*
 Rain, *no*
 Direction of surface current, *N. E.* ; force, *1/3 knots*
 " of bottom " ; force, "
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Dr. Conner*
R. G. Davenport, USN
 Name and position of observer, *J. D. Milligan*
Pharmacist
Near

NOTES RELATING TO STATION NO. 28

Species

Sulphur sponge, (Cliona)

Few capitulum sponges

6 Small star fish from 1 to 3 in. (200)

Pinnipeds

Pieces of dead Necturus shells

Dead shell of - oyster - clam - small

Few small Amphipods

Escharella (?) Encrusting
over of the Sulphur sponge.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *29 - 1956*
 Date, *Nov. 25 1898*
 Time of day, *11.05 am* : of tide, *1/2 h, ebb*
 Locality, *Narragansett Bay*
 Exact position, *Conanicut North Pt.*
Light, N. E. 1/4 E. 1.25 miles mag.
 Depth, *7 fathoms*
 Nature of bottom, *Sandy*
 Dredging instrument used, *7 ft beam trawl*
 Direction of drift, *E 3/4 N.* : distance, *3/8 of mile*
 Temperature of air, *57° Fahr.* therm. No., *7397*
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, ..
 Density at surface, *1.021* temp., *17.3*
 " at depth of .. fathoms, ..
 " at bottom, *1.023* .. *17.7*
 Number of salinometer, *7104*
 Barometer reading, *30.15*
 State of sky, *Cloudy*
 Direction of wind, *S. W.* : force, *6*
 Rain, *No*
 Direction of surface current, *S. W.* : force, *1/2 knot*
 " of bottom .. : force, ..
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. G. Davenport Wrentham
 Name and position of observer, *J. D. Milligan*
Pharmacist Wrentham

NOTES RELATING TO STATION NO. 29

about 2 bush of asph. sponges
 small cluster *Scopula*.
 Few *Cragon* val.
 few small *anthropoda* numerous
 few *Theraps* few -
Chironomus
 1 *E. Pollicaris* etc
Scopula plana
 1 squirrel lake
 1 window pond 1 *Cottus*.
 1 pair of kelp with obelia.
 2 small squirrel lake.
Membranipora.
 20 small *Tar* - 1 in to 3 or 4 in.
 2 root-let.
E. longicauda
Crepidula concolor.
Allianana
Tritia alba with longicauda.
 1 small *Scopula* (?)
 * *Escarella*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 30 — 1957
 Date, Nov. 2 - 1898
 Time of day, 11.30 am; of tide 3/4 hours of eb.
 Locality, Narragansett Bay
 Exact position, Convenient north point
light. S. E. & E. 1/4 E. 37 1/2 miles away
 Depth, 5 fathoms
 Nature of bottom, Muddy mud
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, S. E. & E. 3/4 E.; distance, 5/8
 Temperature of air, 57° Fahr. therm. No., 7297
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, 1.021 temp., 14.2°
 " at depth of fathoms, "
 " at bottom, 1.021 " 13.2°
 Number of salinometer, 7104
 Barometer reading, 30.15
 State of sky, Blue, cloudy
 Direction of wind, P. W.; force, 6
 Rain, No
 Direction of surface current, S. W.; force, 1/2 knot
 " of bottom, " ; force, "
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Lt. Comdr
R. B. Davenport
 Name and position of observer, J. B. McElroy
Commander

NOTES RELATING TO STATION NO. 30

- Squid* large
Sib. "
Squilla
Not found *floridana*
floridana *floridana*
2 *Skate* *Romana*.
1 *Tringa* *spotted* *floridana*
1 *Small* *undetermined*
1 *Small* *common*
Tringa *Rock* *pel*
Bugula *on* *the* *rock*
Sicyopterus *Membran* *1*
Bryozoa *Crangon*
Scapha *Mullus*
Hydroid *Tritia* *(L.)*
1 *Metridium* *1* *Bulla*
Botryllus
Cleodora *(L.)*
Callista *common* *common* *dead* *shell*
Dead *shells* *of* *old* *shells* *of* *old* *shells*
Common *Hydris* *Cleodora*
Sicyopterus *membran* *crispidula*
Caro *caro* *pinn* *latruncular*
Euphorbia *(L.)*
Pholad *costata* *1* *piece*
50 *small* *stars* *1* *in* *to* *5* *inches*
a *few* *small* *fish* *like* *anchovy*
1 *Lymanea* *heptaloba*
1 *Asteroides* *1* *forming* *argona* *pyralis*
L. inornata
few *Anchura* *1* *Ptilin* *mutica*
E. longicauda *E. williamsi*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *31 - 1958*
 Date, *Nov. 20 1898*
 Time of day, *1.30 pm.* ; of tide, *3 3/4 of ebb*
 Locality, *Harrington Bay*
 Exact position, *Connaught Island North*
from N.E. by S. - 1.37 miles mag.
 Depth, *5 fathoms*
 Nature of bottom, *Muddy*
 Dredging instrument used, *7 ft beam trawl*
 Direction of drift, *S.E. x E 1/4 E* ; distance, *3/4 fathoms*
 Temperature of air, *56° Fahr.* therm. No., *7397*
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, *1.020* temp., *17.1°C*
 " at depth of fathoms, " "
 " at bottom, *1.025* .. *17.7°C*
 Number of salinometer, *7104*
 Barometer reading, *30.06*
 State of sky, *Blue Cloudy*
 Direction of wind, *S.W.* ; force, *6*
 Rain, *No*
 Direction of surface current, *S x W* ; force, *1/2 knot*
 " of bottom " ; force, "
 Name of vessel, *U. S. F. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Commr*
R. G. Greenpeace, USNavy
 Name and position of observer, *J. W. H. H. H.*
Pharmacist, USNavy

NOTES RELATING TO STATION NO. 31

- 1 Winter flounder
 1 Haddock
 1 Large skate Lomaxia
 1 very small "
 5 small eel-like fish
 1 Longnose
 2 Pelia hirtata
 + 60 Star fish (Tortie) 20 to 30 in, many small
 Calappa Conrady
 1 Idia Tortie
 1 Clidippa
 1 Crinoida fimbriata
 1 young P. Carolina
 1 1st Sp. flounder.
 2 Crinoida
 1 Small fish-like Thore 30
 1 Crinoida pinnulatum (none alive)
 1 Mercula
 Some mollusks alive; some dead shells.
 1 Syonchis physalis
 1 young Cancer inornata.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. *32 - 1959*
 Date, *Nov. 2 - 1898*
 Time of day, *1.50 pm.*; of tide, *4 hours 7 abt.*
 Locality, *Managawett Bay*
 Exact position, *Andrews North point*
light. 2. N. 1/4 W. 2.57 fathoms
 Depth, *5 fathoms*
 Nature of bottom, *Muddy. Shelly*
 Dredging instrument used, *2 ft beam trawl*
 Direction of drift, *E x S.*, distance, *1/2 mile*
 Temperature of air, *56° Fahr.*, therm. No., *7597*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.021*, temp., *17.3°*
 " at depth of fathoms, "
 " at bottom, *1.024*, " *17.6°*
 Number of salinometer, *7104*
 Barometer reading, *30.07*
 State of sky, *Blue. Cloudy,*
 Direction of wind, *S. W.*; force, *7*
 Rain, *No*
 Direction of surface current, *S x W.*; force, *1/2 knots*
 " of bottom, " force
 Name of vessel, *U. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Dr. Crist*
R. G. Sawapure, USNavy
 Name and position of observer, *R. H. Huggins*
Pharmacist Navy

NOTES RELATING TO STATION NO. 32

- + 50 fms 1m to 5m
- 2 *Monocera* same flounder, small
- 1 *Merluccius*
- 1 dead size *P. Carolina*.
- 1 *Equilla*.
- 1 piece sulphur sponge.
- 1 *Porospongia*.
- few small fish like those on 32
- Chirostoma* - *Sitta*, *Yolky*, *Alb.*
- Gu. caudata*, few
- for *Crangon* Vul
- Callinectes* - several -
- Mulinia lateralis* few
- number very small another pool
- 3 *Corbicula* dead
- 1 *L. Hyalina*.
- Most of the mollusks empty shells
- 1 valve of *Macoma* (?)
- Scapharca* transverse dead
- Small *Rhyssalus* (dead shell)
- L. trilineata*
- Piece of shell of *Pholis costata*,
- Mya* (dead shell)
- fish rock etc.
- Pellia muricea* -
- much more
- Euphorbia*
- Mulinia lateralis* dead shell
- Gastropoda* *perforatus* - *Mulinia*
- 1 *Pinnixa*. Species 1 mollusk
- Many dead shells of these, some live
- Small *Sipat* etc.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *33* — *1960*
 Date. *Nov. 25 1898*
 Time of day. *4.45 pm* : of tide, *5th* of *ebb*
 Locality. *Narragansett Bay*
 Exact position. *Concurrent North River*
Light N. R. 2.67 of mile N.W.
 Depth. *4 1/2 fathoms*
 Nature of bottom. *Muddy*
 Dredging instrument used. *Flux beam trawl*
 Direction of drift. *E. S. E.* ; distance, *3/4 of mile*
 Temperature of air. *56° Fahr.* therm. No., *7397*
 " of surface water. "
 " at depth of fathoms. "
 " at bottom. "
 Density at surface. *1.021* temp., *54.5*
 " at depth of fathoms. "
 " at bottom. *1.025* " *54.5*
 Number of salinometer. *7104*
 Barometer reading. *30.07*
 State of sky. *Blue, Cloudy*
 Direction of wind. *N. W.* ; force, *7*
 Rain. *No*
 Direction of surface current. *Ox W* ; force, *1/2 knot*
 " of bottom " ; force, "
 Name of vessel. *U. S. F. C. L. Fish Hawk*
 Service to which attached. *Fish Commission*
 Name and rank of commanding officer. *1st Lt.*
R. M. Spencer master
 Name and position of observer. *D. M. Sullivan*
Master's Mate

NOTES RELATING TO STATION NO. 33

200 ft. of sand from the bottom

9 small *Window* large *flour* *flour*

3 17 miles *flour*

1 *flour*

6 small *flour* *flour* *flour*

1 *flour*

1 *flour* (*flour*)

2 *flour* *flour* - large

1 *flour* *flour* -

flour - *flour* -

flour, *flour* -

flour, *flour* *flour*

Note:

A number of dead shells of the more common molluscs, in most of the hauls, and of varying abundance, in the different species. *flour* *flour*, nearly always dead shells. There are a few live specimens, nearly of all the species mentioned, in the different hauls, and in some cases not nearly being the empty shells. The number is more or

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *34* — *1961*
 Date, *Nov. 22, 1898*
 Time of day, *3.10 p.m.*; of tide, *Black-water*
 Locality, *Narragansett Bay*
 Exact position, *Narragansett Light N. & W.*
2.75 miles away.
 Depth, *4 1/2 fathoms*
 Nature of bottom, *Muddy*
 Dredging instrument used, *1 ft beam trawl*
 Direction of drift, *E. x S.*; distance, *3/4 of mile*
 Temperature of air, *56° Fahr.* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.021* temp., *17.1° C*
 " at depth of fathoms, "
 " at bottom, *1.022* " *17.6° C*
 Number of salinometer, *7104*
 Barometer reading, *30.05*
 State of sky, *Blue - cloudy*
 Direction of wind, *P. W.*; force, *7*
 Rain, *no*
 Direction of surface current, *0*; force, *0*
 " of bottom " : force,
 Name of vessel, *U. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *At Commr*
R. D. Carpenter, USN
 Name and position of observer, *R. D. Carpenter*
Harvard

NOTES RELATING TO STATION NO. 34

3 or 4 mackerel flounders

" mackerel pike

few pieces of *Amphipora* sponge

Amphipora

Alpheia crinata.

1 *Tautog*

1 *Pagrus*

few small fish like those in 30

2 *Belon* sides

some kelp

Over 100 stars size of station 33

1 *Rock* cell

Crepidula fornicata with eggs

Myxotrypa

Crepidula plana

Crangon vulgaris

Callinectes *coarctatus*

Galga *lanceus* (dead shell)

Clidias

A few scattering hydroids,

Panopaea

Euphorbia *condicta*

Piece of mollusk

Squilla *molle*

Muricea *lanceus*

Worm tubes —

Practically the same as 33

1 *Pygospio*

1 *Corbula*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *35 - 1962*
 Date, *Nov. 2nd 1898*
 Time of day, *4.00 pm*; of tide, *1/2 hour of flood*
 Locality, *Maragayuth Bay*
 Exact position, *Coastal Sta. Light S. W. x*
S. 1.50 of north mag.
 Depth, *8 fathoms*
 Nature of bottom, *muddy*
 Dredging instrument used, *7 ft beam trawl*
 Direction of drift, *S. E 1/4 S*, distance, *3/4 mile*
 Temperature of air, *56° Fahr.*, therm. No., *7397*
 " of surface water, ..
 " at depth of fathoms, ..
 " at bottom, ..
 Density at surface, *1.021*, temp., *13.0° C*
 " at depth of fathoms, ..
 " at bottom, *1.023*, " *13.2° C*
 Number of salinometer, *7104*
 Barometer reading, *30.07*
 State of sky, *Blue - cloudy*
 Direction of wind, *S. W.*; force, *7*
 Rain, *m -*
 Direction of surface current, *N. N. E.*; force, *1/2 knot*
 " of bottom " " force,
 Name of vessel, *U. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *St. Comdr*
R. L. Cameron
 Name and position of observer, *R. L. Cameron*

NOTES RELATING TO STATION NO. 35

- 1 large skate & mackerel
 1 small
 about 100 Star fish 2 in to 5 inches
 Some crabs - vulgaris
 E. longicauda very numerous
 2 small mackerel flounder
 3 Monotomus (1 small)
 Few young of codling
 Several like fish
 Hydractis -
 Cudlow & gravel
 Fossils
 Few small anelids
 E. follicularis
 Tritia empty shells - dead
 Callista Anas "
 Few young silver-hake
 " " Squid " "
 1 young Cancer irroratus, dead
 L. tricerata - numerous dead
 Litorina litorea few - dead
 Few small L. heros - dead only
 Syrticus
 Tula - small - empty
 Litorina few - empty
 Pecten Ten - few empty
 " " 1 live
 1-4 Sp. V. small
 1 Egg mass, jelly like, small (!)
 Few Ascidia, small yellow
 1 lar specimen with small head of
 Tubellaria con. thongs.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 36 1963
 Date, Nov. 2 - 1898.
 Time of day, 4.20 pm; of tide, $\frac{3}{4}$ hour of flood
 Locality, Nanafova Bay.
 Exact position, South Island light
 0.17 1/2 S. 50 of north mag.
 Depth, 7 fathoms
 Nature of bottom, Muddy
 Dredging instrument used, 7 fathom Trawl
 Direction of drift, S. E. ; distance, $\frac{5}{8}$ of mile
 Temperature of air, 56° Fahr. therm. No., 397
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, 1.021 temp., 12.7° =
 " at depth of fathoms, "
 " at bottom, 1.023 " 13° =
 Number of salinometer, 7104
 Barometer reading, 30.07
 State of sky, Cloudy
 Direction of wind, S. W. ; force, 4
 Rain, No
 Direction of surface current, N. N. E. ; force, $\frac{1}{4}$ knot
 " of bottom " ; force,
 Name of vessel, U. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Lt. Comdr
 R. B. Sampson, USN
 Name and position of observer, J. M. Mullen
 Thos. van

NOTES RELATING TO STATION NO. 36

- 1 large skate. *Erinacea*
 1 small white flounder
 1 " window-pane. "
 2 small of spot "
 1 squirrel like small
 2 silver "
 E. longicauda, very numerous
 Several small cancer crabs,
 some orange!
 1 Green heron.
 About 70 starfish. 2 to 4 ft. each
 Several large Annelid worms
 Asterias. Yellow (P.) 2 or 3 seen
 Some yellow.
 Chelopoda, numerous, small.
 Portia - few live
 Several Littorina littorea few dead
 Two eggs of Skali brucea
 Most of the numerals occupied by
 E. longicauda
 P. fasciata, numerous
 Calappa limosa, numerous dead when small
 1 Trophon
 Few small shells of L. toros.
 Few sponges ten small.
 2 or 3 Phacelia? sp.
 1 dead shell Lucina filosa.
 1 live cyclocardia brucea

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No.

37 - 1904

Date.

Nov 13 - 98

Time of day,

9.30 am

: of tide.

Nearly low water

Locality,

Entrance to Black Island Sound

Exact position

Black Island North light

D. 94 E. 2.50 mag.

Depth,

18 fathoms

Nature of bottom,

Sand - rock & gravel

Dredging instrument used,

7 fath beam trawl

Direction of drift,

N x N.

: distance.

1/2 mile

Temperature of air,

52° Fahr.

therm. No. 7297

"

of surface water,

"

"

at depth of fathoms,

"

"

at bottom,

"

Density at surface,

1.023

temp., 13.4°

" at depth of

fathoms,

"

at bottom,

1.023

" 13.6°

Number of salinometer,

7104

Barometer reading,

30.46

State of sky,

Blue - light clouds

Direction of wind,

N. N. E

; force,

3

Rain,

No

Direction of surface current,

E x S

: force,

1/3 knot

" of bottom

"

: force

Name of vessel,

U. S. F. C. S. Fish Hawk

Service to which attached,

Fish Commission

Name and rank of commanding officer,

Lt. Comdr

R. W. Davenport

Name and position of observer,

J. M. Mearns

Pharmaceutical Chemist

* adv.

NOTES RELATING TO STATION NO. 37.

Aleyonium carneum, numerous
small pieces

A few pieces Sulphur sponge
differing from *Cliona sulphurea*
in star. fork. Forks 3 to 4 1/2 inches
by two inch purple star.

1 " " " "
1 arm of third star - Forks

9 *Cribrella* 1/2" to 2 1/2 inch

1 *Anemone*

Few pieces of *Bugula* with bryozoan

1 fragment of hy. droid (?)

1 small small *Callista cornuta*

1 shell of *L. Tricincta* with

E. Longicauda

Tritia 2 alive. one

with *E. Longicauda*.

1 *Tunicate* (?)

Small piece *Ammorocium*.

Clidoptera - 2 dead shells

~~See page 100~~
over
see page 100

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *38* — *1965*
 Date, *Nov. 3rd 1898*
 Time of day, *10, 10* ^{am} ; of tide.
 Locality, *Black Island Sound*
 Exact position, *Black Island North Pt.*
E x S. *1.75 miles* mag.
 Depth, *19 fathoms*
 Nature of bottom, *Hard - Sandy*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N. x S.* ; distance, *5/8 mile*
 Temperature of air, *52° Fahr* therm. No., *7397*
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, ..
 Density at surface, *1.023* temp., *13.6° C*
 " at depth of .. fathoms, ..
 " at bottom, *1.023* .. *14.1° C*
 Number of salinometer, *7104*
 Barometer reading, *30.46*
 State of sky, *Blue - light clouds*
 Direction of wind, *N. N. E* ; force, *3*
 Rain, *No* —
 Direction of surface current, *N. H.* ; force, *1/2 knot*
 " of bottom .. force.
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. G. Sawinfort. US Navy
 Name and position of observer,
J. D. Milligan
Pharmacist

see note in frays book

NOTES RELATING TO STATION NO. 38

- 6 skate *Comacea*
- 9 varying sizes smaller flounder
- 5 Minnow *Parus*
- 2 young *P. Carolina*
- 1 large squirrel hake
- 1 small silver "
- 1 " squirrel "
- 3 small sculp - young
- 1 med. + 1 small of spot flounder
- 2-18 spine *sculpin* (?)
- Seals a number small squid.
- Pandalus* - numerous -
- 1 large empty shell *Cyprina islandica*
- Several large pieces of kelp
- Piece of *circaria* - *roca*
- Fritill a few - 1 *Goldia*
- Manchae* 1 dead shell
- Fusus* - 1 -
- Few *L. tricolorata* with *E. 1* *Bombax*
- Decapod of *clidopora* *L. hyalina*
- reman* *borialis* (young)
- 1 shell of *Cyprina*
- 1 piece of *artem* (sp)
- 1 brittle star small
- About 150 Maroon stars etc 3 in.
- 12 Purple stars - varying sizes
both light & dark
- 1 Hair fish, *Forbes* ^{with} 2 arms
- Evidently regenerated
- Lepidonotus*
- 1 large empty egg case of skate
- Dead stems of *Pennaria* *hyaloid*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 39 1966
 Date, Nov. 3-5 1898
 Time of day, 10.50 am 1/4 hr. of tide
 Locality, Black Island Pond
 Exact position, Black Island north light
N. E. x E. 3.25 miles away
 Depth, 20 fathoms
 Nature of bottom, Hard, sandy
 Dredging instrument used, 7 fms beam trawl
 Direction of drift, N. 1/2 E.; distance, 3/8 mile
 Temperature of air, 53° Fahr therm. No., 7397
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, ..
 Density at surface, 1.023 temp., 13.3°
 " at depth of .. fathoms, ..
 " at bottom, 1.023 " 13.5°
 Number of salinometer, 7104
 Barometer reading, 30.46
 State of sky, Blue - light clouds
 Direction of wind, N. N. E.; force, 1
 Rain, No
 Direction of surface current, No perceptible current
 " of bottom .. : force, ..
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, LT. Comdr
R. G. Sawyers, USNavy
 Name and position of observer, J. H. Milligan
Pharmacist, USNavy

NOTES RELATING TO STATION NO. 39

1 Window pane

2 Silver hake, small

20 Squid hake

30 Skate - immatures

3 small squid hake

1 young sea robin

1 " sculp.

1 E. Bernhardtus

Spirorbis

Few small green urchins

Some small squid. (1 dozen)

Fragment of kelp with bryozoan

1 piece of *Cypripedium islandicum*

Very few *Pandalus*

Tritia abur & with hermit

E. *longicauda* few

L. *tricusata* abur & with hermit

Few small isopods (1 dozen of 11)

4 empty shells of *Lucina filosa*

2 or 3 small *Holothurina*

1 large cancer borealis

1 small 4 spot flounder

Colpidula fornicata

Dead shell of *Cydonia borealis*

About 200 maroon stars 1 to 2

Very few small purple "

2 - *Tritia* stars 1 in & 2 inch

1 small mudcrab, *Dorvillea* (?)

~~For *Spirorbis* & *Lucina*~~

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 40 — 1967
 Date, Nov. 3rd 1897
 Time of day, 11.30 am ; of tide, 1 1/4 km. of ebb
 Locality, Black Island Pond
 Exact position, Black Island No. light
N. E. 1/2 E. 4.50 miles away.
 Depth, 18 fathoms
 Nature of bottom, Mud
 Dredging instrument used, 7 ft. beam trawl
 Direction of drift, South ; distance, 1/2 mile
 Temperature of air, 53° Fahr. therm. No., 7397
 " of surface water, ..
 " at depth of .. fathoms, ..
 " at bottom, ..
 Density at surface, 1.023 temp., 14.8°
 " at depth of .. fathoms, ..
 " at bottom, 1.024 " 13.2°
 Number of salinometer, 7104
 Barometer reading, 30.46
 State of sky, Blue - light clouds
 Direction of wind, N. E ; force, 2
 Rain, no
 Direction of surface current, N. W. ; force, 1/2 knot
 " of bottom " ; force.
 Name of vessel, U.S.F.C.S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Lt. Comdr
R. H. Bawson, surgeon
 Name and position of observer, K. M. L. Jewell
Pharmacist, U.S.N.

The small Pandalus

NOTES RELATING TO STATION NO. 40

- 1 Common flounder { *Bregula*
- 2 Spotted hake { *Spotted hake*
- 2 Silver hake { *Silver hake*
- 1 white flounder { *white flounder*
- 1 skate - crinacea { *crinacea*
- 1 window pane (Bothus)
- 3 very small silver hake
- 1 young carp.

modiola modiolus.

About a doz pieces of long leaf, laminar
no with some attached, covered with
bryozoa and hydroids. (Obelia)

Few small squid,

1 empty egg case, crinacea bryozoa
Algae with comaria hydroid and

Few pecten ten, small & med. size

Few stems of tubularia costalis.

Crepidula fornicata.

1 *Cancer irrorata*

About 3 doz Maroon stars

Few very small arbores

1 *Pycnogonist*

Fragment of sulphur sponge

6 very small purple stars.

2 small *Buccinum*

1 *Cyclodonta borealis*.

Few *E. Longisarpus*

Few *Bronchodonta*

Few *Crepidula plana*.

2 *Cancer irrorata*, small,

Few empty shells of *Cycl. borealis*

Tatula, sea clams, *L. tridentata*, *Anomia*

oviscitulum, *modiola modiola*

small *buccinum*, *L. harrisi*, few small

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 41 — 1968
 Date, Nov. 3rd 1898
 Time of day, 12.05 ; of tide, 13/4 h. of ebb
 Locality, Black Lake, Conn.
 Exact position, Black Lake, S.E. by N
E 1/4 W. 3.50 miles away
 Depth, 7 1/4 fathoms
 Nature of bottom, gravelly
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, North ; distance, 1/8 mile
 Temperature of air, 54° Fahr. therm. No., 7397
 " ~~at surface water,~~ "
 " ~~at depth of~~ fathoms, "
 " ~~at bottom,~~ "
 Density at surface, 1.023 temp., 13.2° C
 " ~~at depth of~~ fathoms, "
 " at bottom, 1.023+ " 13° C
 Number of salinometer, 7104
 Barometer reading, 30.46
 State of sky, Blue, light clouds
 Direction of wind, N. E ; force, 1
 Rain, No —
 Direction of surface current, N. W ; force, 1/2 knot
 " ~~at bottom,~~ " ; force, "
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, St. Louis
R. G. Davenport, USN
 Name and position of observer, J. H. Sullivan
Pharmacist, USN

NOTES RELATING TO STATION NO. 41

about half a peck of corals
and *camaria hydroids*.

A little gravel.

Some small sponges.

12 small purple stars, $\frac{1}{2}$ to 2 in.

2 *Cribrella*.

1 brittle star.

Some small isopods

" " amphipods

Bygonia, plentiful

1 small piece of *algonium*

a very few small squid.

Anachis 1 or 2

Tritia 1 or 2

A few astyris.

2 or 3 small undibranch *Spiribella*

1 *Russell*, *Z. angularis* (?)

2 *Praxinos*, very small

Spyrobia (some)

a few young *Caenor borealis*,

Astragelia 1 piece

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 42 - 1969
 Date, Nov. 3 - 1898
 Time of day, 1.35 pm; 3 hours of aft.
 Locality, N. East of Black Island.
 Exact position, Black Island N. E. light
E x N, 6 miles mag.
 Depth, 20 1/4 fathoms
 Nature of bottom, Sand, gravelly
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, N. E x E; distance, 1/2 mile
 Temperature of air, 57° Fahr. therm. No., 7397
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, 56° negative
 Density at surface, 1.023 temp., 13.3°
 " at depth of fathoms, lighter cup
 " at bottom, 1.023 " 13.2°
 Number of salinometer, 7104
 Barometer reading, 30.46
 State of sky, Blue - light clouds
 Direction of wind, S. S. E.; force, 1
 Rain, No
 Direction of surface current, E; force, 1/2 knot
 " of bottom " force.
 Name of vessel, U. S. F. C. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, St. Comdr
R. G. Sawaport, U. S. Navy
 Name and position of observer, J. H. Hillebrand
Pharmacist, U. S. Navy

NOTES RELATING TO STATION NO. 42

- 10 18 *Opoma sculpinus*
 Several young sea urchins
 " " " " purp.
 16 *Mixta fluminea*
 1 4 sp. "
 2 small *Comacea*
 6 *Umbra jama*
 16 *Pecten* ten various sizes
Capnodula formicata
Pandalus ^{some with eggs} ~~numerous~~ }
Hydrov tubulera cutag.
 Small *Guan. pumila* hybrid
 + *Coralis*
 A few *Crucibulum striatum*
 Some small pieces of *Alcyonium*
 Young silver hake (?)
 2 young squid
 1 deep sea anemone
 Few young silver hake (?)
Cyclopora borealis
Sypho pumila - several
 some alive; some with leonards
Borochardus
 1 (?) *Eopodius*
 + 30 *Maroon stars* 1/2 to 2 in
 2 purple stars, 1 in to 3 in
 Few broken shells.
 1 small anemone
 Empty shell most. *modiol*
 " " *Cyprina islandica*
 1 *U. l. hove*
 Several colonies of what looks
 like *Craspedogaster*

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 43 - 1970
 Date, Nov. 3rd 1898
 Time of day, 4.20 pm : of tide, 4 hours of ebb.
 Locality, N. E. of Sheep Island.
 Exact position, Pt. Duval Light
N. N. W. - 7.25 miles away
 Depth, 20 fathoms.
 Nature of bottom, Sandy, gravelly
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, E x S 1/2 S. distance, 3/4 mile
 Temperature of air, 57° Fahr. therm. No.,
 " of surface water, "
 " at depth of ~~X~~ fathoms, "
 " at bottom, 56° Negeth
 Density at surface, 1.023 temp., 13.1°
 " at depth of ~~_____~~ fathoms, lighter air
 " at bottom, 1.023 + " 13.2°
 Number of salinometer, 7104
 Barometer reading, 30.46
 State of sky, Blue - light clouds
 Direction of wind, S. S. E. : force, 1
 Rain, no
 Direction of surface current, E x S. : force, 3/4 knot
 " of bottom ~~_____~~ : force, "
 Name of vessel, U. S. F. C. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Dr. E. C. ...
R. G. Sawaport
 Name and position of observer, J. M. Sullivan
Pharmacist

NOTES RELATING TO STATION NO. 43

- 4 Rusty-flounder
 1 four spot "
 3 common pane "
 100 Dollars, Halfpork ^{average} small
 4 Pecten ten-lapge -
 few young sea robin
 4 " sculp
 " silver bladdie (?)
 few Pandalus
 scallop *vinaria* (?)
 6 Astoria Castanea
 A little Coralline algae
 few Barnacles
 few Triton
 Sypho pygmaea
 Agave
 1 young sea clam
 1 very young flounder (?)
 2 small piece branch coral (?)
 1 young cancer broods.
 fascioid of alcyonium small
 1 or 2 Crangon, small.
 2 Dry Maroon stars
 1 - 1/2 inch purple star (?)
 2.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. 44 - 1971
 Date. Nov 3 - 98
 Time of day. 3.10 pm ; of tide. Spring of ebb.
 Locality. N. E. of Black Island
 Exact position. N. of Judith Light
N. 12. x 92 1/2 N. 6.50 miles mag
 Depth, 16 fathoms.
 Nature of bottom. Hard sand.
 Dredging instrument used. 7 foot beam trawl
 Direction of drift, E 3/4 N. ; distance, 5/8 mile
 Temperature of air, 56° Fahr. therm. No., 7397
 " of surface water. "
 " at depth of fathoms. "
 " at bottom, 56° negretti "
 Density at surface, 1.023 temp., 13.3° C
 " at depth of fathoms, "
 " at bottom, 1.023 + 13.7°
 Number of salinometer, 7104
 Barometer reading, 30.42
 State of sky, Blue light clouds
 Direction of wind, N. W. ; force, ✓
 Rain, no
 Direction of surface current, Exd ; force, 3/4 knots
 " of bottom " ; force,
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Ch. Ensign
R. G. Barnard, 1st class
 Name and position of observer, J. M. Sullivan
Pharmacist, U.S.N.

NOTES RELATING TO STATION NO. 44

1 *Ammodramus plumbeus*

1 *ovule*

1 *trout*

14 young sea robin

3 *shale crinacea*

3 " spotted *spines* - middle of
base of *crinacea*

Several young sculp.

1 young silvers hake

1 " squirrel "

a few small eel

small number of *pandalus*

1 quart of *canth. dollase*

6 *pecten* than 3 small
lunaria hake.

Tricardata occupied by *Bonhart*
a few *tritia*

Capordula plana

fornicata

1 stem of hydroid - long - (?)

9 maroon stars less than 1/2
in. to 2 in.

2 *cruciatillum striatum* - 1 with eggs -

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *45* *1972*
 Date. *Nov. 3rd 1908*
 Time of day, *3.55* : of tide, *low water*
 Locality, *N.E. of Black Island*
 Exact position, *Pt. Judith light.*
W 1/2 N. 8.50 miles
 Depth, *17 1/2 fathoms*
 Nature of bottom, *Sandy*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *E x N*; distance, *3/4 mile*
 Temperature of air, *56° Fahr* therm. No. *7397*
 " of surface water, "
 " at depth of fathoms. "
 " at bottom, *55° Fahr* *Regatta.*
 Density at surface, *1.023 +* temp., *13.1°*
 " at depth of fathoms, *higher up*
 " at bottom, *1.024* .. *13.2°*
 Number of salinometer, *7104*
 Barometer reading, *30.41*
 State of sky, *Blue - light clouds.*
 Direction of wind, *N. O. N.*; force, *2*
 Rain, *no*
 Direction of surface current, *0*; force, *0*
 " of bottom " ; force.
 Name of vessel, *U.S.F.C.S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. G. Davenport, USNavy
 Name and position of observer, *J. H. H. H.*
Pharmacist USNavy

NOTES RELATING TO STATION NO. 45

5 Winter flounder

✓ *Minion* *porus*

1 silver hake medium

(?)

3 eelgrass

3 Skates - *ornata*

1 skate spotted (?)

few more sand dollars

" *faustulus*

several pieces of submarine cable

1 young silver hake (?)

3 " sea robins,

a few small squid.

Bernhardus. Several in

Intia & *triseriata* shells

4 *Buccinum* *intima*

1 small piece branch coral (?)

About 24 Mason stone. 1 to 2 in

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *46 - 1973*
 Date, *Nov 4 1898*
 Time of day, *8.30 am* of tide, *3^d h^h flood*
 Locality, *S. H. 2 miles S. of Portman's River*
 Exact position, *Phantom reef l. ship*
N. W. 1/2 25 miles away
 Depth, *18 fathoms*
 Nature of bottom, *Sandy - shelly*
 Dredging instrument used, *7 feet beam trawl*
 Direction of drift, *S. E. & E. 1/4 E.* distance, *5/8 mile*
 Temperature of air, *58° Fahr.* therm. No., *7397*
 " of surface water, ..
 " at depth of fathoms, ..
 " at bottom, ..
 Density at surface, *1.023* temp., *13.3*
 " at depth of fathoms, ..
 " at bottom, *1.023 +* " *14° C*
 Number of salinometer, *7104*
 Barometer reading, *30.44*
 State of sky, *Blue hazy*
 Direction of wind, *Calm* : force, ..
 Rain, *no*
 Direction of surface current, *N. W.* : force, *1/2 knot*
 " of bottom " : force, ..
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *U. S. Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. E. Davenport
 Name and position of observer, *J. H. Hildreth*
Pharmacist Navy

NOTES RELATING TO STATION NO. 46

- 7 spiny hake -
 4 Windowpane -
 Several young sea robin
 Few Pandalus.
 5 Skate - cornacea, ^{rather} small
 Several young silver hake (?)
 7 molly flounder
 1 four spot .. (Parasitic on flounder
 1 winter .. (by. ?)
 Few Crangon. Winter skate had
 1 winter skate. Parasitic
 Few small squid
 Few sand dollars
 Few empty shell of cyprina -
 islandia, with stems of Tubularia ^{caerulea}
 Tritia - numerous
 Neptuna pygmaea - few -
 E. Bernhardtia } in Tritia
 E. longicauda } shells
 Suberites, compacta.
 Few young hake - spiny (?)
 few young Buccinum small
 Nearly 100 Maroon stars. ^{1 1/2 in. to} 3 inches
 1 valve of cyclocardus bonalis
 Hydractinia
 Caprellida plana.
 Cuneibulum
 L. Triceriatum with Hermonia
 1 valve, small oyster.
 Few small shrimp, name (?)

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 47 — 1974
 Date, Nov. 4 - 98
 Time of day, 9.15 : of tide, 2nd of flood
 Locality, off mouth of Raritan river
 Exact position, Edgewater Light
E. N. E. 2.6 miles mag.
 Depth, 14 fathoms
 Nature of bottom, Sandy
 Dredging instrument used, 7 foot beam trawl
 Direction of drift, E. N. E. ; distance, 5/8 mile
 Temperature of air, 59° Fahr therm. No., 7397
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, 1.023 temp., 13.3° C
 " at depth of fathoms, " "
 " at bottom, 1.024 " 13.3° C
 Number of salinometer, 7104
 Barometer reading, 30.45
 State of sky, blue, hazy
 Direction of wind, Calm ; force,
 Rain, no
 Direction of surface current, N. W. ; force, 1 knot
 " of bottom " : force,
 Name of vessel, U. S. F. C. S. Fish Hawk
 Service to which attached, Fish Commission
 Name and rank of commanding officer, Lt. Commr
R. Y. Sawinport, USN
 Name and position of observer,
J. H. Milhgan
Pharmacist, USN

NOTES RELATING TO STATION NO. 47

- 4 winter flounders
- 1 very large summer flounder
- 1 rusty flounder
- 1 squirrel hake.
- 4 skate *trirachia*.
- 2 winter " (?)
- 1 peck sand dollars
- Few young *P. carolinus*
- Fragment of sponge
- A little algae
- Spirorbis*
- few silver hake (?)
- few *Pandalus*
- Caprellida plana*
- 1 shell of *Littorina littorea* ^{not} _{hermit}
- 1 young cancer (?)
- Hydris*. small number
- Few crabs
- about 2 doz. *Maroon* $\frac{1}{2}$ to 3 in
- 1 or 2 young *Buccinum*.

RECORD OF DREDGING.

TEMPERATURE AND DENSITY.

Station No. *48 - 1975*
 Date. *Nov. 4th 1898.*
 Time of day. *9.55* ; of tide. *4 1/2 h. of flood*
 Locality, *Bar mouth of Benton River*
 Exact position, *Atkinson Light*
S. x E. 1/2 - 9 *1.67 miles N.W.*
 Depth, *9 1/2 fathoms*
 Nature of bottom, *Sand - gravel*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N x E* ; distance, *1/2 mile*
 Temperature of air, *57° Fah* therm. No., *7397*
 " of surface water, " "
 " at depth of fathoms, " "
 " at bottom, " "
 Density at surface, *1.023* temp., *13.°*
 " at depth of fathoms, " "
 " at bottom, *1.023* " *12.5°*
 Number of salinometer, *7104*
 Barometer reading, *30.45*
 State of sky, *Blue*
 Direction of wind, *Calm* ; force, *0*
 Rain, *No*
 Direction of surface current, *N x E* ; force, *1 knot*
 " of bottom " : force, "
 Name of vessel, *U. S. F. C. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. G. Swenson
 Name and position of observer, *H. M. Kellogg*
Pharmacist U.S.N.

NOTES RELATING TO STATION NO.

48

16 *Ammodramus* *fluminalis*

16 *Squid* *hase*

1 small sea-raven

1 star-fish *Forbesii*

7 *Skate* *innacea*

3 *Sculpin*

1 young hake - *spine*

2 " *cunner*

1 small *conner*

Few sand dollars

1 *Libinia*

Chalina doz bunches

2 *Maroon* star $\frac{1}{2}$ - $\frac{3}{4}$ in.

2 *Bernhardus*

few *Pollicaria* few

Buccinum undatum - small

E. longicauda - few

Eurodalmus

L. tricerata few

* *L. heros* few

Tritia

1 pipe fish

Few *crayon*

1 *machis*

1 *E. annulipes*

1 *Sigambra* - small

2 small *Pala*

Bunch of sculpin eggs

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *49* — *1976*
 Date, *Nov. 4 - '98*
 Time of day, *10.30* ; of tide, *High water*
 Locality, *In Sacramento river*
 Exact position, *Church Point N. H. 1/2 N*
95 *9 miles up river*
 Depth, *5 fathoms*
 Nature of bottom, *Gravelly*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N. E. x N.* distance, *1/4 mile*
 Temperature of air, *60° Falm* therm. No., *7397*
 “ of surface water, “
 “ at depth of fathoms, “
 “ at bottom, “
 Density at surface, *1.022 +* temp., *17.0°*
 “ at depth of fathoms, “
 “ at bottom, *1.023* “ *17.1°*
 Number of salinometer, *7104*
 Barometer reading, *30.4*
 State of sky, *Blue*
 Direction of wind, *Calm* ; force,
 Rain, *no*
 Direction of surface current, *0* ; force, *0*
 “ of bottom “ ; force,
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Lt. Comdr*
R. S. Davenport *Master*
 Name and position of observer,
J. H. Milligan
Pharmacist Warner

NOTES RELATING TO STATION NO. 49

- 1 doz skates *erinacea*
- 1 large & 1 small spined hake
- 2 *Stenotomus* *floridanus*
- 2 window panes
- 1 Cunner
- 1 cluster of *Chalcid*
- several young fish, slender 1/2 in
- Few crabs.
- 1 *E. longicaudus*
- 1 *E. pollicaris*
- 1 *E. amuliposus* several
- 1 *Capridon* *planus*
- 1 *Forficata*
- few *Balanus*
- 1 *Neosartia* with hermit
- 1 *Cyclopterus* "
- 2 1/2 in. star fish (?) narrow
- Littorina littorea*
- Fritia*
- Hydrach* *tinea*
- 1 *L. vincta* (?)
- 1 valve of goldfish
- 1 young fish
- 3 " resembling bass
- 1 *Chirona* *tenella*.

RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *50* *1977*
 Date, *Nov. 4th 1898*
 Time of day, *11. am* ; of tide, *High Water*
 Locality, *In excavated river*
 Exact position, *High Hill point*
N. E 1/2 N . 67 ft a mile
 Depth, *4 3/4 fathoms*
 Nature of bottom, *Rocky*
 Dredging instrument used, *7 foot beam trawl*
 Direction of drift, *N x W.* ; distance, *3/8 mile*
 Temperature of air, *60° Fahr* therm. No., *7397*
 " of surface water, "
 " at depth of fathoms, "
 " at bottom, "
 Density at surface, *1.022* temp., *15° C*
 " at depth of fathoms, "
 " at bottom, *1.023* " *12.4° C*
 Number of salinometer, *7104*
 Barometer reading, *30.45*
 State of sky, *Blue*
 Direction of wind, *S. W.* ; force, *1*
 Rain, *no*
 Direction of surface current, *0* ; force, *0*
 " of bottom " ; force, "
 Name of vessel, *U. S. F. C. S. Fish Hawk*
 Service to which attached, *Fish Commission*
 Name and rank of commanding officer, *Dr. Comdr*
R. E. Sawcutter M. M. A. M.
 Name and position of observer, *J. M. Gilligan*
Pharmacist M. M. A. M.

Few sponges here
 1 small flounder - small
 2 skates - crinoids.
 Few dead shells Balanus, with
 Membranipora & Serpula
 Cypodula formicata
 Plana.
 Escarella
 E. Pollicaris several
 E. Longicauda few
 Lomatia heros.
 Nucrita
 1 Lobia
 1 Tricriata
 2 Pilia mutica
 1 ~~Fus~~ Orfina & 1 empty shell
 a few small scapharca
 1 Eurosalpinx.
 Cypractinea.
 1 Fulgar
 1 regenerating Tai. Forbes
 Few lepidonotus.
 P Chymenella
 1 Hamarous sp.
 Copleura caudata dead shell